

# (12) UK Patent Application (19) GB (11) 2 333 658 (13) A

(43) Date of A Publication 28.07.1999

(21) Application No 9828405.2

(22) Date of Filing 23.12.1998

(30) Priority Data

(31) 9727007

(32) 23.12.1997

(33) GB

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(51) INT CL<sup>6</sup>

H04N 5/74 7/18

(52) UK CL (Edition Q )

H4F FAAX FD27V FD30K FD45 FJH  
G5C CCD C614

(56) Documents Cited

GB 2326557 A GB 2313510 A WO 96/08113 A1  
US 5761601 A US 5612741 A

(58) Field of Search

UK CL (Edition Q ) H4F FAAX FCW FJH  
INT CL<sup>6</sup> H04N 5/74 7/16 7/18 9/31  
Online databases: WPI, JAPIO

(54) Abstract Title

Information Display Apparatus

(57) Apparatus for publicly displaying changing advertisements, information and the like consists of a multiplicity of dispersed billboards in the form of screens 10, projectors 12 for optically projecting moving images onto the respective billboards, and a control data source linked to the projectors by respective cables 18 for transmitting digital information thereto. The data source 14 is preferably a computer with a visual display unit 16, and the projectors are preferably digital projectors. As described, each projector is mounted in a flattened spherical housing on top of a hollow post. The housing contains a thermostatically controlled heater for keeping the installation warm when it is out of use and the upper part of the post contains a fan and vents for cooling the projector when it is in use. The data source may be programmed to transmit a sequence of advertisements as well as local traffic information and the like to each projector. Each billboard includes a screen and a roller-mounted cover bearing an advertisement which is deployable in response to signals from the computer. This cover is intended for day time use.

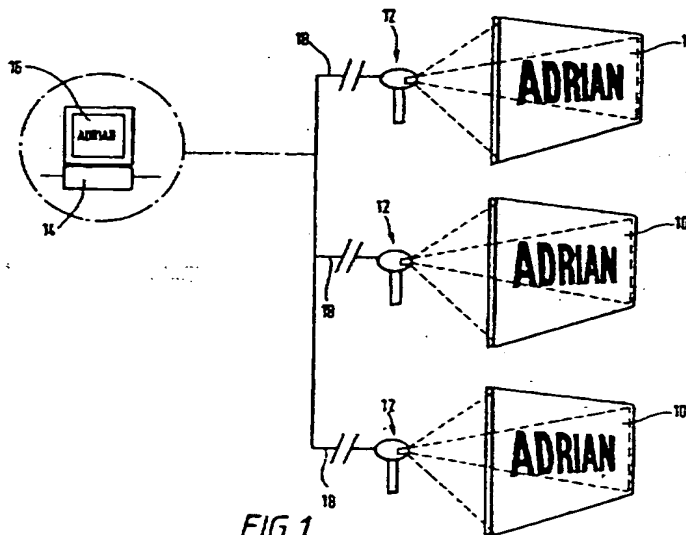


FIG.1.

At least one drawing originally filed was informal and the print reproduced here is taken from a later filed formal copy.

This print takes account of replacement documents submitted after the date of filing to enable the application to comply with the formal requirements of the Patents Rules 1995

GB 2 333 658 A

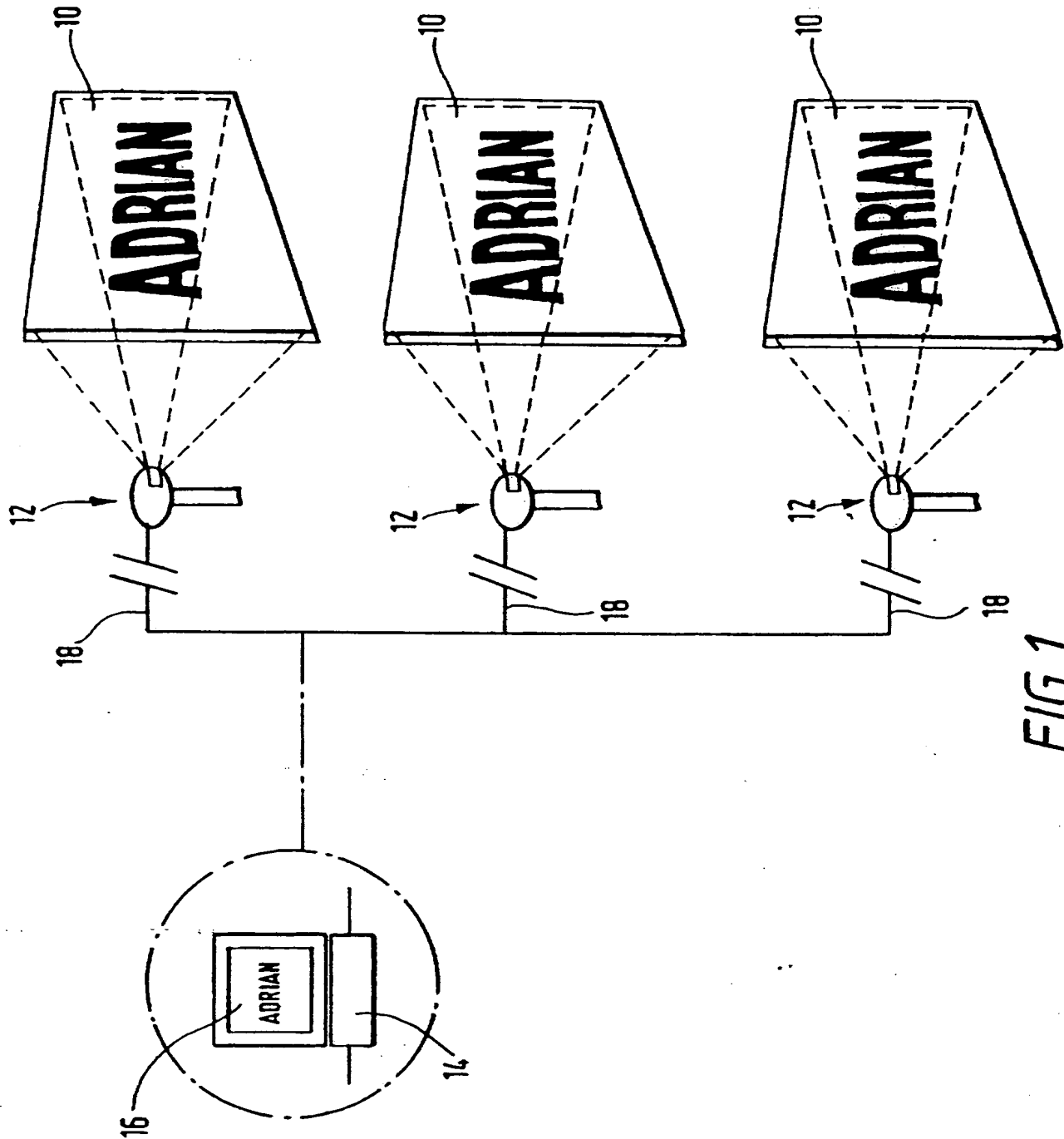
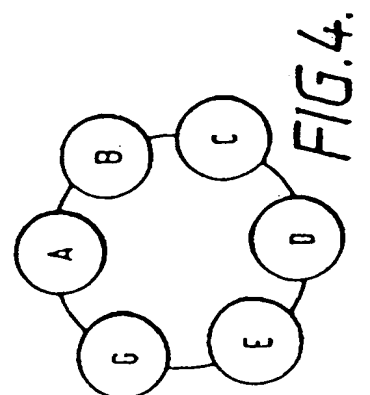
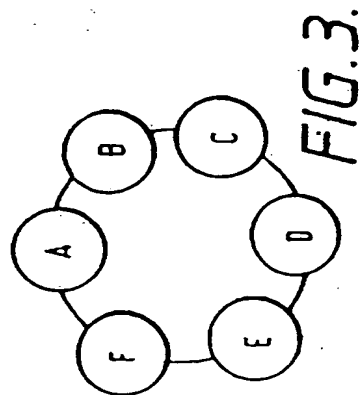
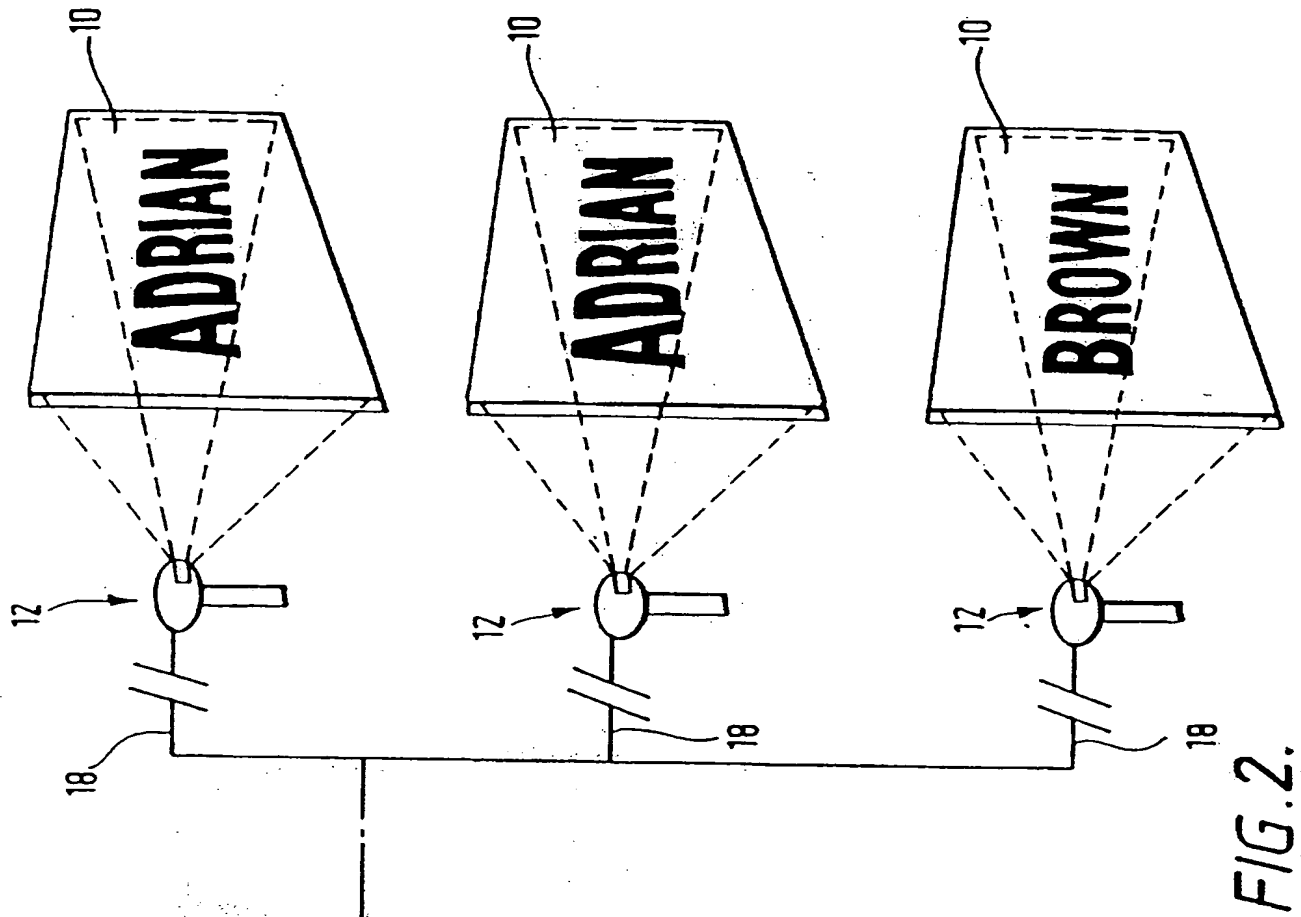


FIG.1.



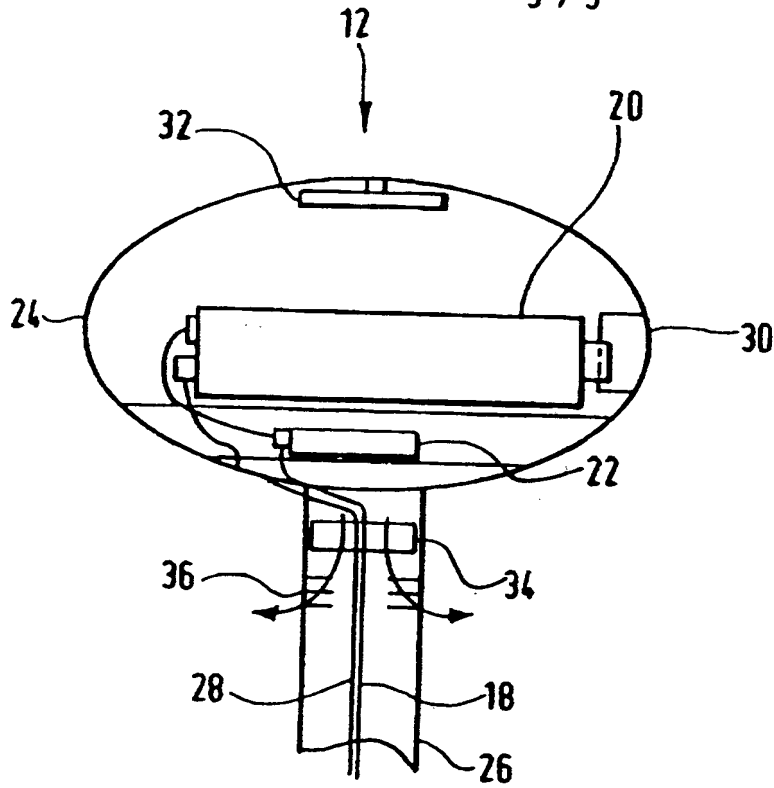


FIG. 5.

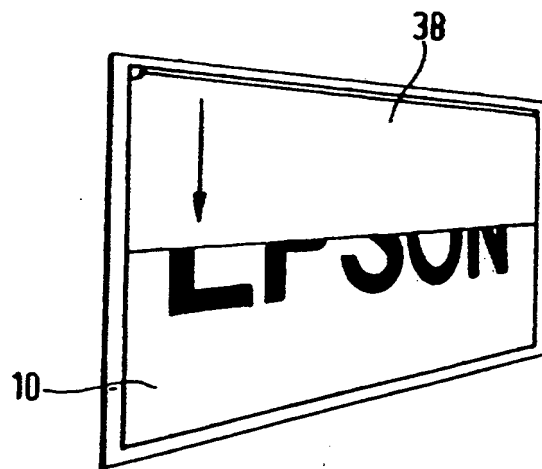


FIG. 6.



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(1)

"Information Display Apparatus"

This invention relates to information display apparatus, and more particularly to billboards for publicly displaying advertisements, information and the like.

Billboards bearing static paper advertisements have long been well known, and it is also known to display changing information such as news items, ambient temperature and the time of day by the selective switching of lights in a single panel.

The object of the present invention is to apply modern technology to billboard advertising.

According to the invention, apparatus for publicly displaying changing advertisements, information and the like comprises a multiplicity of dispersed billboards in the form of screens, means for optically projecting moving images onto the respective billboards, and a control data source linked to said means by respective cables for transmitting information thereto in digital form.

The means preferably comprise digital projectors.

Preferably, each projector and an associated data processing unit are installed in a housing secured on top of a hollow post which surrounds the adjacent end portion of the associated cable.

Preferably, also, the upper end of the post contains a fan and associated vents for cooling the projector.

(2)

The control data source preferably comprises a computer including a visual display unit.

Each billboard may be provided with a roller advertisement deployable and retractable automatically in front of the billboard in response to signals from the central data source for day-time use when images projected by the means would not be effectively visible.

One embodiment of the invention will now be described, by way of example, with reference to the accompanying drawings, of which:-

Figure 1 shows three billboards linked to a central computer;

Figure 2 is a similar view showing one of the billboards displaying different information to the other two;

Figure 3 shows diagrammatically a repeated sequence of advertisements;

Figure 4 shows diagrammatically a change in one of the advertisements of Figure 3;

Figure 5 is a sectional side elevation of a digital projector installation; and

Figure 6 shows a billboard with a roller advertisement in the process of being deployed in front of it.

Referring now to Figures 1 to 4 of the drawings, a multiplicity of billboards in the form of

(3)

light-sensitive canvas screens are widely dispersed at strategic outdoor or indoor public viewing points around a given area which may be national, regional (for example the county of West Yorkshire or the city of Leeds), or  
5 local (for example the Meadowhall shopping complex). Close to each billboard 10 is a digital projector installation indicated generally at 12, which is arranged to project moving images optically onto the billboard by back-projection as shown, or from the front of the  
10 billboard. A control data source comprising a computer 14 including a visual display unit 16 is linked to the projector installations 12 by respective data cables 18 which constitute a so-called independent system digital network and which conveniently consist of telephone lines,  
15 for transmitting information to the installations 12 in digital form. The computer 14 and each of the projector installations 12 have separate power sources. The computer 14 may normally be programmed to transmit a repeated sequence or loop of advertisements plus a news  
20 bulletin/flash, traffic information, a severe weather warning, or the like, as denoted at A to F in Figure 3, the duration of each individual item being, say, from 10 seconds to two minutes. For example A might last for 10 seconds, B for 30 seconds, C for 25 seconds, D for 45  
25 seconds, E for 30 seconds, and F for 15 seconds, the total duration of the sequence thus being 155 seconds. Any

(6)

be rectified with minimum loss of display time on each billboard 10.



Claims:

1. Apparatus for publicly displaying changing advertisements, information and the like comprising a multiplicity of dispersed billboards in the form of  
5 screens, means for optically projecting moving images onto the respective billboards, and a control data source linked to said means by respective cables for transmitting information thereto in digital form.
2. Apparatus according to claim 1, wherein the means  
10 comprise digital projectors.
3. Apparatus according to claim 2, wherein each projector and an associated data processing unit are installed in a housing secured on top of a hollow post which surrounds the adjacent end portion of the associated  
15 cable.
4. Apparatus according to claim 2 or claim 3, wherein the upper end of the post contains a fan and associated vents for cooling the projector.
5. Apparatus according to any one of the preceding  
20 claims, wherein the control data source comprises a computer including a visual display unit.
6. Apparatus according to any one of the preceding claims, wherein each billboard is provided with a roller advertisement deployable and retractable automatically in  
25 front of the billboard in response to signals from the central data source for day-time use when images projected

(8)

by the means would not be effectively visible.

7. Apparatus constructed, arranged and adapted to operate substantially as hereinbefore described with reference to, and as illustrated by, the accompanying 5 drawings.



Application No: GB 9828405.2  
Claims searched: 1

Examiner: Bill Riggs  
Date of search: 19 May 1999

**Patents Act 1977**  
**Search Report under Section 17**

**Databases searched:**

UK Patent Office collections, including GB, EP, WO & US patent specifications, in:

UK Cl (Ed.Q): H4F (FAAX, FCW, FJH)

Int Cl (Ed.6): H04N (5/74, 7/16, 7/18, 9/31)

Other: Online databases: WPI, JAPIO

**Documents considered to be relevant:**

Category	Identity of document and relevant passage	Relevant to claims
X	GB 2326557A (Dahlgren, Hylin, Jonason Media AB) see at least p. 7 line 18 - p. 8 line 5, p.8 lines 15 - 19, p. 10 lines 22 - 27, figure 1 and claim 1	1, 2, 5
X	GB2313510 A (Paula Adrienne Robertson) see figure 1 and abstract	1
Y	WO 96/08113 A1 (Bylon Company Ltd.) see at least p.3 lines 19 - 28	1
Y, P	US 5761601 (Nemirofsky et al.) see at least col. 5 lines 1 - 19 and claim 1	1
Y	US 5612741 (Curtis Mathes Marketing Corp.) see at least fig. 1 and col. 1 lines 30 - 49	1 - 5

X Document indicating lack of novelty or inventive step  
Y Document indicating lack of inventive step if combined with one or more other documents of same category.  
& Member of the same patent family

A Document indicating technological background and/or state of the art.  
P Document published on or after the declared priority date but before the filing date of this invention.  
E Patent document published on or after, but with priority date earlier than, the filing date of this application.

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